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REMARKS

In the Office Action of September 20, 2005, claims 1-6 and 8-21 are pending. All claims stand rejected. Claims 1, 13, and 17 are independent claims from which all other claims depend therefrom. Claim 1 is herein amended. Claim 15 is canceled. Claim 22 is newly added. Applicants request that the amendments be entered since they only clarify or explicitly state what has already been claimed and examined. The amendments do not raise any new issues that would need further examination.

Rejections of claims 17, 19, and 20 under 35 U.S.C. § 102

The Office Action states that claims 17, 19, and 20 stand rejected under 35 U.S.C. 102(a) as being anticipated by Breed (U.S. Pat. No. 6,343,810).

Claim 17 recites a method of modifying collision load paths of a vehicle. The method includes the limitations of activating one or more structural stiffness-adjusting devices within a frame rail of the vehicle in response to one or more object parameters. The Office Action states that these limitations are disclosed by the method of Breed. The Office Action refers to the Abstract, to col. 4, lines 52-col. 5, line 55, and to col. 11, line 57-col. 12, line 10 of Breed for such reliance. Applicants, respectfully, traverse.

Applicants submit that Breed fails to teach or suggest a structural stiffness-adjusting device, the use of a structural stiffness-adjusting device within a frame rail of a vehicle, and the activation of a structural stiffness-adjusting device within a frame rail and in response to an object parameter. Breed discloses an airbag system that deploys airbags in general on the side of a vehicle. The airbags are deployed internally to prevent impact between an occupant and a door panel or externally to absorb energy from an impending vehicle. The airbags are not located within a frame rail, are not activated or deployed within a frame rail, and do not stiffen the structure of a vehicle. The airbags are mounted on a support beam and do not stiffen the support beam. If anything, the airbags weaken the support beam when deployed, due to the forces exerted thereon. Although the airbags are located within a door, the

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airbags are deployed externally to the door, either into the interior of the vehicle or external to the vehicle. The deployed airbags do not stiffen a structure, such as the door on which the airbags are mounted, but rather absorb energy exerted within a collision. When an airbag is deployed internally, the airbag absorbs or reduces the amount of energy exerted on the vehicle occupant and increases the amount of space between the occupant and the intruding object. When an airbag is deployed externally, the airbag absorbs or reduces the amount of energy exerted on the host vehicle. If the impending object has enough energy to push through the airbags, the structure of the door is not stiffened by the airbags and will respond to the impact as such.

The Abstract of Breed merely discloses the airbag system described above for deployment of an airbag within an interior of a vehicle. Col. 4, lines 52-col. 5, line 55 of Breed discloses the advantages of the airbag system described. Note that a couple of the advantages state that the purpose of the airbag system is to move an occupant and corresponding seat in the event of a collision. Col. 11, line 57-col. 12, line 10 of Breed discloses a pattern recognition system for identifying an object. None of the stated sections disclose or suggest the activation of one or more structural stiffness-adjusting devices within a frame rail of a vehicle.

In order for a reference to anticipate a claim the reference must teach or suggest each and every element of that claim, see MPEP 2131 and *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628. Thus, since each and every element of claim 17 is not taught or suggested by Breed, Applicants submit that claim 17 is novel, nonobvious, and is in a condition for allowance. Also, since claims 19 and 20 depend from claim 17, they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons.

Rejections of claims 1-6, 9-10, and 12 under 35 U.S.C. § 103

Claims 1-6, 9-10, and 12 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Fraley (U.S. Pat. No. 6,786,508) in view of Yokota (U.S. Pat. No. 6,560,520).

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Amended claim 1 recites an adaptive collision load path modification system for a vehicle. The adaptive system includes object detection sensors that generate object detection signals in response to one or more objects external to the vehicle. A structural stiffness-adjusting device is coupled within a frame rail of the vehicle. A controller activates the structural stiffness-adjusting device in response to the object detection signals. The structural stiffness-adjusting device includes an outer body at least partially filled with a magneto-rheological material. The magneto-rheological material stiffens the frame rail when activated to increase alteration resistance of the frame rail, and thus prevent alteration of the frame rail, as a result of colliding with the object.

The Office Action states that Fraley discloses the limitations of an adaptive collision load path modification system that includes a structural stiffness-adjusting device, which is coupled within a frame rail. Applicants traverse and submit that Fraley fails to teach or suggest any of these limitations. Fraley discloses an occupant protection apparatus and more specifically a knee bolster system. The knee bolster system includes a pair of bladders that contain magnetorheological fluid. A pair of walls is included in the bladders and is movable relative to a housing. During a collision event, knees of the occupant push against the movable walls and force the fluid out of the bladders and into a reservoir. The bladders are used to absorb the energy exerted thereon. The bladders are not used to increase structural stiffness of the instrument panel. The bladders are used to prevent injury to a vehicle occupant by reducing the accelerated impact forces of the occupant with an interior portion of the vehicle. The bladders do not prevent bending or alteration of the instrument panel. The system of Fraley is designed such that the instrument panel actually deforms in providing trim panels that move with the front walls of the bladders.

Although Fraley suggests that the bladders may be used in the locations of frame pillars of a vehicle, that does not mean that they would be used to stiffen the pillars nor does it imply that the bladders would be

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incorporated into the frame pillars. It is not clear from Fraley how the bladders would be utilized when in the locations of the pillars. Applicants submit that the incorporation of the bladders into the pillars to absorb energy from a vehicle occupant would weaken or reduce the stiffness of the pillars due to the removal of pillar material to accommodate for the bladders and associated movable panels. Applicants further submit that if the bladders were attached to the surface of the pillars they would not affect the stiffness of the pillars, but rather would simply absorb energy in the isolated location of the bladders. The bladders of Fraley, simply put, are used as a cushion or dampening device to absorb energy, they are not used to stiffen a vehicle structure, and especially not a frame rail.

The Office Action infers that the system of Fraley is directed to vehicle interior objects or more specifically vehicle occupants and is not directed to external objects. Applicants agree. The Office Action states, however, that Yokota is directed to both internal and external objects. Applicants submit that regardless of whether this is true, Applicants have shown that Yokota, like Fraley, also fails to teach or suggest a structural stiffness-adjusting device that is located within a frame rail and is filled with a magneto-rheological material, the magneto-rheological material stiffening the frame rail when activated to increase alteration resistance of the frame rail. Yokota only discloses the use of airbags and Fraley does not teach or suggest a structural stiffness-adjusting device, a structural stiffness-adjusting device that is located within a frame rail, and a structural stiffness-adjusting device that stiffens a frame rail.

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Applicants further submit that Fraley is nonanalogous art. Although Fraley, as the Office Action states, discloses a system for dealing with an imminent danger situation as is incorporated within a vehicle, that does not mean that there are similarities in structure and function or that the system of Fraley serves the same purpose as that of the present invention. There are various different imminent danger situations and there are various different safety systems that may be incorporated within a vehicle. Applicants submit that the ability of a system to respond within a vehicle in an imminent danger situation does not render all other safety systems obvious, similar, or even related. Referring to MPEP 2141.01(a), while the Patent Office classification of references and cross-references in the official search notes are some evidence of "nonanalogy" or "analogy" respectively, the court has found "the similarities and differences in structure and function of the inventions to carry far greater weight." *In re Ellis*, 476 F.2d 1370, 1372, 177 USPQ 526, 527 (CCPA 1973). Applicants submit that the structure, function, and purpose of the system of Fraley are clearly different than that of the present invention. Fraley would not have logically commended itself to the inventor's attention in considering the problems solved by the system of claim 1.

In developing a system to reduce the impact forces exerted on a vehicle from an external object, and more specifically to reduce the intrusion of objects into the interior cabin of a vehicle, one would not look to the system of Fraley. Fraley is solely directed to preventing injury to vehicle occupants by absorbing energy experienced when a body element of an occupant collides with an interior panel of a vehicle. The present invention, on the other hand, is directed to the stiffening of the frame rails of a vehicle to prevent intrusion into a vehicle interior cabin. The system of Fraley adjusts the acceleration speed of interior vehicle panels, whereas the present invention stiffens frame rails to reduce bending thereof. There is a clear and distinct difference between the system of Fraley and the present invention. The system of Fraley is not similar, does not perform the same functions, and does not satisfy the same purposes as that of the present invention. Fraley would not be

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reasonably pertinent to the particular problems solved by the claimed invention. Thus, the Applicants submit that Fraley is nonanalogous art and to use such a reference is far reaching at best.

Referring to MPEP 2143, to establish a *prima facie* case of obviousness, there must be some suggestion or motivation provided to combine and modify the references to arrive at the claimed invention and that the suggestion must be found in the prior art and not in Applicants' disclosure. See *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Also, the mere fact that references can be combined or modified, does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. See *In re Mills*, 916 F. 2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Applicants submit that no motivation to combine and modify the stated references exists in either of the stated references nor has any objective reason been put forth to combine and modify the stated references as needed to arrive at the present invention, see nonanalogous argument above.

Referring to MPEP 706.02(j) and 2143, to establish a *prima facie* case of obviousness the prior art references must teach or suggest all the claim limitations. Since Fraley and Yokota alone or in combination fail to teach or suggest each and every element of claim 1 and since Fraley is nonanalogous art, it is also novel, nonobvious, and is in a condition for allowance. Since claims 2-6, 9-10, and 12 depend from claim 1, they too are novel, nonobvious, and are in a condition for allowance.

Rejections of claims 13-16 and 21 under 35 U.S.C. § 102

Claims 13-16 and 21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Yokota in view of Wong (U.S. Pat. No. 3,871,471) and Kolassa (U.S. Pat. No 6,290,019).

Claim 13 recites an adaptive collision load path modification system that includes multiple object detection sensors that generate object detection signals and a tire deflation apparatus. An electronic controller activates the

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tire deflation apparatus to at least partially deflate a tire on the vehicle in response to the object detection signals.

The Office Action states that Yokota fails to disclose a tire deflation apparatus. Applicants agree. The Office Action, however, states that Wong teaches deflating a tire in a collision danger situation and Kolassa discloses tires that can be deflated electronically and as a result it would have been obvious to combine the stated references to arrive at the present invention. Applicants, respectfully, traverse.

Applicants submit that Kolassa is also nonanalogous art. Although Kolassa is directed to a system that responds in a vehicle danger situation, that does not in any way suggest that it is analogous art. Kolassa discloses a system that responds in a rollover situation. Kolassa deflates respective tires to prevent a vehicle from rolling over. This is completely different than the present invention, which deflates one or more tires to adjust the load path during a collision. The system and controller of Kolassa clearly perform a different function and for a different purpose as that of the claimed invention. Kolassa is thus nonanalogous art.

Also, although a reference discloses object detection sensors and a controller that does not suggest that the sensors and the controller are the same or that they perform the same function as that claimed. For example, Yokota in response to object detection activates one or more airbags. The system of claim 13 in response to object detection deflates one or more tires. Clearly the controller of Yokota performs differently than the controller claimed.

Applicants have previously stated that the tire deflation apparatus of Wong is manually operated via a vehicle operator not by an electronic controller. When the vehicle operator determines that there is an impending imminent collision situation or that the vehicle braking system has failed, the vehicle operator may deflate a pair of tires via a switch. Thus, Wong, like Yokota, fails to disclose an electronic controller for the activation of a tire deflation apparatus. In addition, Wong fails to disclose object detection

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sensors and the activation of tire deflation apparatuses in response to object detection signals.

Thus, since Kolassa is nonanalogous art and since Yokota and Wong fail to teach or suggest each and every element of claim 13, therefore, claim 13 is also novel, nonobvious, and is in a condition for allowance. Since claims 14-16 and 21-22 depend from claim 13, they too are novel, nonobvious, and are in a condition for allowance.

Rejection of claim 8 under 35 U.S.C. § 102

Claim 8 stands rejected under 35 U.S.C. 103(a) as being unpatentable in view of Yokota, Wong, Kolassa, and Breed.

Applicants submit that since claim 8 depends from claim 13 it too is novel, nonobvious, and is in a condition for allowance for at least the same reasons.

Also, note that Breed fails to teach or suggest a stiffness-adjusting device, as stated above. In addition, Breed discloses the deployment of airbags in response to object identity. Like Yokota and Wong, Breed does not disclose tire deflation in response to object identity. It would not have been obvious to combine Breed with Yokota, Wong, and Kolassa, especially since Kolassa is nonanalogous art. Thus, claim 8 is also novel and nonobvious for the stated reasons. Besides the combination and modification of so many references is far reaching and the use of improper hindsight reasoning in view of the present invention.

With respect to claim 22, note that Wong only discloses the deflation of a pair of tires on opposite sides of a vehicle for even distribution on each side of the vehicle. Wong fails to teach or suggest the deflation of one or more ties on a single side of the vehicle. This is also supported by the purpose of the system of Wong, which is to decelerate a vehicle, as opposed to altering the load path of a collision.

In paragraph 11, the Office Action states that Applicants' arguments were directed to the references individually, which is improper when the rejections are based on combinations of references. Applicants submit that

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they did argue the references in combination. For example, Applicants in the previous Response of August 17, 2005 and with respect to claim 13 stated that both Yokota and Wong fail to disclose an electronic controller for the activation of a tire deflation apparatus. Applicants agreed with the Examiner that Yokota failed to disclose a tire deflation apparatus and submitted that Wong failed to disclose the deflation of a tire in response to object detection signals. It is clear, without expressly stating, that since Yokota fails to disclose a tire deflation apparatus that Yokota also fails to disclose the deflation of a tire in response to object detection signals. Thus, Applicants submit that they did and are herein arguing the references in combination.

Entry of the Amendments

Applicants respectfully request entry of the foregoing amendments. The Office Action states that Applicants' amendment necessitated the new grounds of rejection. Referring to MPEP 706.07, Applicants, respectfully, submit that this action has been improperly been made final. Applicants agree that under present practice a second or subsequent action may be made final even when the Examiner introduces a new ground of rejection as is necessitated by Applicants' amendment. However, Applicants are also aware that present practice does not sanction hasty or ill-considered final rejections. The Applicants have merely sought to define the patent protection to which they are justly entitled. The Applicants have previously and clearly amended the claims such that the claimed invention is not taught or suggested by the prior art, and in so doing they deserve the cooperation of the Examiner and should not be prematurely cut off in the prosecution. The Applicants have responded promptly and have not resorted to technical or obvious subterfuges.

Moreover, Applicants submit that since the Fraley and Kolassa references are nonanalogous art that the at least some of the previous and current rejections are improper and irrelevant. Also, since the prior art fails to teach or suggest each and every element of the claims, that the present

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application was also improperly made Final. Although the claims have been and are currently in allowable form in view of the relied upon art, should the Examiner deem a further search is necessary, the application should be made non-final and the issuance of an Advisory Action should be deemed inappropriate at this time.

In light of the amendments and remarks, Applicants submit that all the rejections are now overcome. The Applicants have added no new matter to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments, the Examiner is respectfully requested to contact the undersigned attorney.

Respectfully submitted,

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